

**PROCESSES FOR FABRICATING PRINTED WIRING BOARDS USING
DENDRITIC POLYMER COPPER NANOCOMPOSITE COATINGS**

ABSTRACT OF THE DISCLOSURE

An inexpensive process for depositing an electrically conductive material on selected

5 surfaces of a dielectric substrate may be advantageously employed in the manufacture of
printed wiring boards having high quality, high density, fine-line circuitry, thereby allowing
miniaturization of electronic components and/or increased interconnect capacity. The process
may also be used for providing conductive pathways between opposite sides of a dielectric
substrate and in decorative metallization applications. The process includes steps of depositing
10 a radially-layered dendritic copolymer on selected surfaces of a dielectric substrate; cross-
linking the radially-layered dendritic copolymer to form a dendritic polymer network; sorbing
metal cations into the cross-linked dendritic polymer network; reducing the metal cations to
form a nanocomposite composition exhibiting adequate surface electrical conductivity for
electroplating; and electroplating a metal onto the nanocomposite composition to form an
15 electrically conductive deposit.